GOVERNMENT OF SINDH

Request For Proposals
Works (Design and Build)

RFP No.: PK-SMTA-334960-CW-RFP
Loan No.: IBRD-89950

Procurement of Package - 4: NEW JAM SADIQ BRIDGE (Yellow Corridor Segment 3)

KARACHI MOBILITY PROJECT

Volume 3

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3 Roadworks
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Project Director (Karachi Mobility Project)
Bus Rapid Transit (BRT) "Yellow Line"
Sindh Mass Transit Authority, Karachi-Pakistan

Issued on: March 2023

Request For Proposal Documents
Works (Design and Build)

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BASIS OF PRICING

PRICING PREAMBLES

1. INTRODUCTION

1.01 The Contract is based on Lump Sum price and the Works will not be re-measured. The rules contained in this document for the basis of pricing shall be the basis for the Proposer's pricing of the items in the pricing schedules.

1.02 The Pricing schedules shall not by any means be construed as a limitation for the Proposer's obligations under the Contract Documents including, without limitation, the drawings, Specifications, Employer's requirements and other Proposal/Contract Documents and/or implied or inferred by these documents to provide fully functional and fit for the purpose Project. Accordingly, the Proposer shall fulfil all his contractual obligations under the Contract Documents at no additional cost.

1.03 The Proposer shall satisfy himself as to the meaning of every item in the Pricing schedules, and the Contract Price is deemed to cover all his obligations under the Contract and all matters and things necessary for the proper design, construction, completion and maintenance of the works. No claim for additional payments shall be allowed for any error or mis-understanding by the Proposer in these respects.

1.04 Any items missing from the Pricing schedules and defined in the Employer's requirements, Specifications and/or the drawings and/or deemed necessary to allow for a fully functional and fit for the purpose Project are deemed to be included in the total Proposal/Contract price.

1.05 The Proposer shall price every item in the pricing sections of the Pricing schedules. Any item left un-priced shall be deemed to have been allowed for in the prices of other items and the Proposer shall not be entitled to any claim for payment in respect of un-priced items. No claim raised by the Proposer for payment in respect of any unpriced items will be admitted.

1.06 Lump sums set against groups of items shall not be acceptable.

1.07 The Proposer has to submit a detailed breakdown of all items in accordance with requirement defined in the Employer's requirements.

1.08 The Proposer has during the Proposalr period to allow for and take into consideration in his prices any additional items or temporary works deemed to be necessary to complete the works, and he shall not be entitled to claim for additions after the Contract award, and those additions are deemed to be included in his Proposal/Contract Price.

1.09 The Design works shall be priced separately in the pricing schedules, and shall be deemed to include all design works for permanent and temporary installations needed to complete the construction scope of works as included in the Proposal / Contract documents.

2. DESCRIPTIONS

2.01 General descriptions of work and materials are not necessarily complete in the Pricing schedules and reference should be made to the Conditions of Contract, Employer's Requirements, Specifications and to the Drawings for this information. The prices inserted in the Pricing schedules must be comprehensive and should be the full inclusive cost of the work in every respect and of all general liabilities and obligations set forth or implied in the documents on which the Proposal is based. The completed prices must truly reflect the value of the item described.

2.02 Headings to groups of items in the Pricing schedules are to be read as part of the descriptions of the items to which the headings apply.

2.03 Dimensions are stated in descriptions generally in the sequence length, width, height. Where ambiguity could arise, the dimensions are identified.

2.04 Dimensions given in descriptions are in millimetres unless otherwise indicated.

2.05 The costs of the following are deemed to be included in the rates for the works:

labour and all costs in connection therewith,

materials, products, goods and all costs in connection therewith,

Proposer's equipment, including but not limited to construction plant, scaffolding, tools, vehicles and the like, and all costs in connection therewith,

assembling, fitting and fixing materials, products and goods in position,

any method of fixing, fixing to any nature of base or background including preparation and providing fixing materials,

breaking down for transport and installation and subsequent re-assembly of composite items manufactured off site,

waste of materials,

square, raking and curved cutting,

work at any location or height,

work in small, isolated quantities,

protection of all work,

protection of all existing structures, utilities, site improvements, trees and vegetation, features, pavements and other facilities on and adjacent to the site, which are to remain upon completion of the work,

all other enabling tasks, associated and subsidiary components and items of work, which are indicated or reasonably inferred from the Drawings and/or Specification, and necessary to perform and complete the work described,

establishment and overhead charges and profit.

2.06 The provision of liabilities and requirements stipulated in the Proposal & Contract Conditions and Division 01 of the Specifications, which are including, but not limited to the following shall not have separate items in the Pricing schedules and are deemed to be included in the rates of all works:

comply in all respects with the Specifications, Employer's Requirements, Contract's Scope of works, Drawings, Pricing schedules for the design, execution and completion of the whole of the Works as shown, described, indicated or reasonably inferred from the Employer's Requirements and/or Drawings and/or Specifications and other Contract Documents; including but not limited to all preparatory and enabling tasks, ancillary and associated works, coordination with other Proposers, implementation of all Environmental Mitigation and Monitoring Measures, and installations necessarily required to satisfactorily construct, execute, complete and deliver the whole of the Works as indicated, fully functional and fit for purpose, to the complete satisfaction of the Engineer/Employer.

site administration and security,

insurances,

bonds and guarantees,

water for the works,

lighting and power for the works,

temporary accommodation for the use of the Employer, Engineer and Proposer,

temporary facilities for the use of the Employer and Engineer as specified in Section 015000 of the Specifications

temporary telephones for the use of the Employer, Engineer and Proposer, and the cost of calls,

temporary facilities for the use of the Proposer,

temporary roads, hard standings, crossings and the like,

temporary fencing, hoardings, screens, fans, foot- ways, guardrails, gantries and the like,

safety, health and welfare of workpeople,

compliance with traffic regulations,

giving notices and making applications, including the payment of fees and charges in connection therewith,

maintenance of public and private roads, services and adjoining property,

control of noise and pollution, prevention of fire and compliance with all other statutory and general obligations,

removing rubbish, protective casings and coverings and cleaning the works on completion,

drying the works,

testing and commissioning of service installations including providing fuel,

samples of materials and testing of materials, including providing equipment for testing,

Mock ups,

Cutting and patching,

design, co-ordination, installation and as-built record drawings and the like,

preparation and submittal of reports, records, certificates, notices, proposals, designs, details, calculations and other information and data required by the Specification,

allow in the rates of the items for all other requirements services, provisions, liabilities and obligations contained in Division 01 of the Specifications and the Conditions of Contract.

Maintaining, adapting, clearing away and making good are deemed to be included with the items for temporary works.

3. SYMBOLS, ABBREVIATIONS AND DEFINITIONS

3.1 The following symbols and abbreviations may be used in any of the Proposal / Contract documents:

m	=	linear metre
m2	=	square metre
m3	=	cubic metre
cm	=	centimetre
mm	=	millimetre
Nr	=	number
kg	=	kilogramme
T	=	tonne
%	=	percentage.
dn	=	nominal diameter
Qty	=	quantity
Drg	=	drawing.
Mpa	=	Mega Pascal

3.2 The following definitions apply to all work:

'horizontal' means level or sloping work not exceeding 15 degrees from the horizontal,

'sloping' means sloping work exceeding 15 degrees but not exceeding 80 degrees from the horizontal,

'vertical' means work exceeding 80 degrees from the horizontal,

'curved' means curved in any direction or in more than one direction and to any radius or radii, and includes curved work to domes, vaults and the like.

3.3 The term 'extra over' means that the work so described involves extra cost over the basic work in which it occurs. No deduction of the quantity of basic work is made for the extra over work.

1- DESIGN & SPECIAL WORKS

A DESIGN WORKS

1. The works under this item are given as a Lumpsum Item.

2. The design works are deemed to include the verification and validation of the Concept Design and the preparation of the Detailed Design, based on the requirements defined in the Proposal/Contract Documents, for all Project elements, including:

   data collection,

   surveys and investigations,

   road design,

   geotechnical design,

   structural design,

   bridge rehabilitation design,

   pavement design,

   street lighting design

   drainage design,

   traffic control and safety designs,

   utilities designs,

   BIM modeling,

   coordination and interface management,

   obtaining all necessary approvals and NOCs.

B GEOTECHNICAL INVESTIGATIONS

1. Related Specification Section:

   Section 023200 – Geotechnical Investigations

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

planning the site investigation works to meet the Employer's Requirements within the Contract schedule,

obtaining any required permits,

mobilisation,

protection of all existing structures, utilities, pavements, and other facilities on and adjacent to the site, which are to remain upon completion of the work,

drilling and coring,

standpipe piezometers,

insitu testing,

laboratory tests,

geophysical surveys,

interpretation of all in-situ testing,

interpretation of all laboratory test results,

interpretation of all geophysical survey result,

provision of design and construction recommendations supported by pertinent calculations and references,

full supervision of field works, field testing, laboratory testing by competent geotechnical engineers and geologists,

reports,

updating and modifying the investigations and the reports to satisfy the Engineer's comments.

C PHYSICAL HYDRAULIC MODEL

1. The works under this item are given as a Lumpsum Item.

2. Work is deemed to include:

   building of physical hydraulic model by a reputed and competent hydraulic research institute / department,

   hydrology & hydraulic studies,

   submission of approved reports,

   topographic / riverine surveys,

   geo-technical/sub-soil investigations (if required).

D RIVER TRAINING WORKS

1. Related Specification Section:

   Section 312413 – Embankment

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

   clearing and grubbing,

   excavation, fill & levelling,

   dressing,

   jungle cutting,

   grouted riprap,

   granular filter layer,

   granular sub base layer,

   stone pitching on river embankment,

stone apron,

stone dumping as protection works for structures,

abutment stem,

alternate earthen channel(s),

protection works as required for the rainy season.

E TEMPORARY TRAFFIC MANAGEMENT

1. Related Specification Section:

   Section 015530 – Temporary Traffic Management

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

   preparation of Temporary Traffic Management Plan and securing related approvals

   construction of the diversion roads and temporary road works,

   relocation or removal of the temporary works when required,

   coordination with the local traffic police and other concerned Authorities

   providing and mantaning traffic signs, traffic signals, hazard markers, warning tapes, flashing amber lights,

   all types of pavement markings, detours signs, chevrons marking,

   barriers and barricades complete in all respects,

   necessary components and accessories,

   costs of necessary manpower / flagmen.

2- BRIDGE WORKS

2.1- NEW BRIDGE
2.3- RECONSTRUCTION OF EXISTING BRIDGE

A STRUCTURAL EXCAVATION AND BACKFILLING

1. Related Specification Section:

   Section 312000 – Earth Moving

2. The works under this item are given as a Lumpsum Item.

3. This item covers all excavation and engineered backfill for the substructure.

4. The excavation works are deemed to include the costs of:

   extra volume required to ensure stable side slopes,

   any method of excavating and working,

   excavating in any material whatsoever encountered including rock, variations to bulk,

   commencing excavating at any level, and excavating to any depth,

   any width of trench and any number of pits,

   curved excavation,

   excavating below ground water level (irrespective of any difference between the post-contract and pre-contract level),

   maintaining any adopted dewatering system in operation, as needed, in a safe and efficient manner according to the approval of the Engineer until adequate safety factor of the structure is ensured against buoyancy,

   excavating next to existing services and around existing services crossing excavations including temporary support, temporarily re-routing, sealing and removing services as required,

breaking out existing materials and hard pavings including concrete, reinforced concrete, brickwork, block work, stonework, drains, and coated macadam or asphalt and the like,

extra excavation for working space and to accommodate earthwork support including additional disposal, backfilling, work below ground water level, breaking out and earthwork support,

earthwork support (including interlocking steel piling) including support below ground water level, to unstable ground, next to roadways, next to existing buildings and support left in,

disposal of ground water and surface water,

disposal of excavated material, on site or off site, including spreading and levelling or depositing in spoil heaps, providing tip and paying fees and multiple handling,

backfilling to excavations with material arising from excavations or imported filling material including depositing and compacting in layers and multiple handling,

surface treatments including compacting surface of ground and bottoms of excavations, levelling and grading to falls, trimming sloping surfaces and trimming vertical surfaces to sides of cuttings (including trimming in rock) and applying herbicides, pesticides, and anti-termite treatment.

5. The engineered backfilling works are deemed to include the costs of:

preparing surfaces to receive filling,

using material arising from excavations including selecting and treating or using imported filling material,

filling of any thickness,

multiple handling,

variations to bulk,

filling below ground water level,

filling and compacting in layers including levelling and grading to falls and slopes, and loss of material into ground during filling and compaction,

trimming sloping and vertical sides of filling and embankments,

excavating benchings in sloping ground to receive filling and in sides of sloping filling, including disposal,

blinding surfaces of filling with sand, gravel, ash or other fine material,

providing protective filling and removing on completion,

removing from site unsuitable and surplus filling materials,

quality control testing of placed fill layers according to project specifications.

B SUPERSTRUCTURE - PRECAST

1. Related Specification Section:

Section 033000 – Cast In-Place Concrete
Section 348313 – Prestressed Concrete Construction
Section 348316 – Concrete Bridges and Erection Procedure
Section 348333 – Bridge Waterproofing System

2. The works under this item are given as a Lumpsum Item.

3. This item covers the construction and erection of the pre-cast concrete beams and slabs of the bridge deck.

4. Work is deemed to include the cost of the following:

designing mixes, (including all tests and quality control procedures),

any method of pouring, placing, compacting and curing,

pouring on or against earth or unblinded hardcore,

any thickness, cross-sectional area or number of members,

reinforcement, reinforcement accessories, pre-stressing steel and pre-stressing system accessories and anchors zones of pre-stressing.

all ducts, sheathing and grouting as well as pre-stressing system testing and calibration.

cast in accessories,

concrete treatment,

all formwork works,

concrete coatings,

horizontal, sloping, vertical and curved work,

placing or finishing to falls and cross falls,

basic finish as struck from formwork (including coffered or troughed formwork) and tamped worked finish,

extra width of concrete or formwork to edges of blinding beds,

temporary formwork or other form of temporary support to all surfaces, including design, construction, supports, fixing, striking, removing, re-propping and all formwork requirements,

concrete works around congested reinforcement of any percent,

day joints (construction joints), contraction joints and joints required in the forming of bays including formwork and treatment of reinforcement crossing the joint,

all labours on concrete including working around pipes or cables, cutting channels, chases, mortices, pockets and holes and including subsequent grouting or filling and making good.

C SUPERSTRUCTURE – CAST IN SITU

1. Related Specification Section:

Section 033000 – Cast-In-Place Concrete
Section 033050 – Massive Cast-In-Place Concrete
Section 348313 – Prestressed Concrete Construction
Section 348316 – Concrete Bridges and Erection Procedure
Section 348326 – Bridge Parapets and Railing
Section 348333 – Bridge Waterproofing System

2. The works under this item are given as a Lumpsum Item.

3. This item covers the construction of the cast-in-situ concrete superstructure elements of the bridge, including top slab, diaphragm, concrete barrier, parapet/railing, and Visual Barrier.

4. Work is deemed to include the cost of the following:

designing mixes, (including all tests and quality control procedures),

any method of pouring, placing, compacting, and curing,

pouring on or against earth or unblinded hardcore,

any thickness, cross-sectional area, or number of members,

upstand parapets (including upstand beams, if any),

parapets

Visual Barrier

reinforcement, reinforcement accessories, pre-stressing steel, and pre-stressing system accessories and anchors zones of pre-stressing.

all ducts, sheathing, and grouting as well as pre-stressing system testing and calibration.

cast in accessories,

concrete treatment,

all formwork works,

waterproofing installation inspection and testing,

concrete coatings,

horizontal, sloping, vertical and curved work,

placing or finishing to falls and cross falls,

basic finish as struck from formwork (including coffered or troughed formwork) and tamped worked finish,

extra width of concrete or formwork to edges of blinding beds,

temporary formwork or other form of temporary support to all surfaces, including design, construction, supports, fixing, striking, removing, re-propping and all formwork requirements,

concrete works around congested reinforcement of any percent,

day joints (construction joints), contraction joints and joints required in the forming of bays including formwork and treatment of reinforcement crossing the joint,

all labours on concrete including working around pipes or cables, cutting channels, chases, mortices, pockets and holes and including subsequent grouting or filling and making good.

D SUBSTRUCTURE

1. Related Specification Section:

Section 033000 – Cast In-Place Concrete
Section 033050 – Massive Cast In-Place Concrete
Section 348316 – Concrete Bridges and Erection Procedure
Section 348333 – Bridge Waterproofing System

2. The works under this item are given as a Lumpsum Item.

3. This item covers the construction of the cast in-situ concrete substructure elements of the bridge including transom, columns, abutment, retaining walls, pile caps and piles.

4. Work is deemed to include the cost of the following:

designing mixes, (including all tests and quality control procedures),

any method of pouring, placing, compacting and curing,

pouring on or against earth or unblinded hardcore,

any thickness, cross-sectional area or number of members,

wall and column kickers.

reinforcement, and reinforcement accessories,

concrete treatment,

all formwork works,

waterproofing installation inspection and testing,

concrete coatings,

horizontal, sloping, vertical and curved work,

placing or finishing to falls and cross falls,

basic finish as struck from formwork (including coffered or troughed formwork) and tamped worked finish,

extra width of concrete or formwork to edges of blinding beds,

termite control,

pile drilling and pile testing,

temporary formwork or other form of temporary support to all surfaces, including design, construction, supports, fixing, striking, removing, re-propping and all formwork requirements,

concrete works around congested reinforcement of any percent,

day joints (construction joints), contraction joints and joints required in the forming of bays including formwork and treatment of reinforcement crossing the joint, column and wall kickers and construction joints,

all labours on concrete including working around pipes or cables, cutting channels, chases, mortices, pockets and holes and including subsequent grouting or filling and making good.

E ELASTOMERIC BEARINGS

1. Related Specification Section:

   Section 348323 - Bridge Bearings

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

   installation,

   testing,

   adhesives and joint fillers,

   mechanical location devices.

F EXPANSION JOINTS

1. Related Specification Section:

   Section 348319 - Bridge Expansion Joints

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

   Installation,

   sheet material filler,

   formwork,

   horizontal, sloping and vertical work,

   any width or depth of joint.

G BRIDGE DRAINAGE SYSTEM

1. Related Specification Section:

   Section 348329 – Bridge Deck Drainage

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

   material,

   fabrication,

   installation,

   testing,

   pipes,

   gully frames & grating,

   accessories.

2.2- DEMOLITION OF EXISTING BRIDGE

1. Related Specification Section.

   SEC-024116 – Structure Demolition

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

   All resources, material and equipment

   Preparing and execution of approved demolition plan

   All necessary probing, shoring and safety precautions

   Approved traffic management and safety plan and execution

   Cleaning up all debris and remaining immediately after demolition.

   Disposing of all removed materials at authority approved off-site location/s, including all necessary relevant prior approvals

3- ROADWORKS

A SITE CLEARANCE

1. Related Specification Section:

   Section 311000 – Site Clearance

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

   removing site features (including fences, gates, walls, roads, paved areas and the like; but excluding demolition of structures), including breaking out foundations,

   removing trees and tree stumps, including grubbing up roots,

   clearing site vegetation (including hedges, bushes, scrub and undergrowth) including grubbing up roots,

   protecting site features, trees and site vegetation which are to remain,

   removing general debris and rubbish,

   filling voids,

   disposal of materials,

   temporarily diverting ditches, field drains and other waterways including reinstating on completion or cleaning and filling.

B EARTH MOVING

1. Related Specification Section:

   Section 312000 – Earth Moving

2. The works under this item are given as a Lumpsum Item.

3. This item covers all excavation and soil fill for roadworks.

4. The excavation work is deemed to include:

extra volume required to ensure stable side slopes,

any method of excavating and working,

excavating in any material whatsoever encountered including rock, variations to bulk,

commencing excavating at any level, and excavating to any depth,

any width of trench and any number of pits,

curved excavation,

excavating below ground water level (irrespective of any difference between the post-contract and pre-contract level),

maintaining any adopted dewatering system in operation, as needed, in a safe and efficient manner according to the approval of the engineer until adequate safety factor of the structure is ensured against buoyancy,

excavating next to existing services and around existing services crossing excavations including temporary support, temporarily re-routing, sealing and removing services as required,

breaking out existing materials and hard pavings including concrete, reinforced concrete, brickwork, block work, stonework, drains, and coated macadam or asphalt and the like,

extra excavation for working space and to accommodate earthwork support including additional disposal, backfilling, work below ground water level, breaking out and earthwork support,

earthwork support (including interlocking steel piling) including support below ground water level, to unstable ground, next to roadways, next to existing buildings and support left in,

disposal of ground water and surface water,

disposal of excavated material, on site or off site, including spreading and levelling or depositing in spoil heaps, providing tip and paying fees and multiple handling,

backfilling to excavations with material arising from excavations or imported filling material including depositing and compacting in layers and multiple handling,

surface treatments including compacting surface of ground and bottoms of excavations, levelling and grading to falls, trimming sloping surfaces and trimming vertical surfaces to sides of cuttings (including trimming in rock) and applying herbicides, pesticides, and anti-termite treatment.

5. The soil fill work is deemed to include:

preparing surfaces to receive filling,

using material arising from excavations including selecting and treating or using imported filling material,

filling of any thickness,

multiple handling,

variations to bulk,

filling below ground water level,

filling and compacting in layers including levelling and grading to falls and slopes, and loss of material into ground during filling and compaction,

trimming sloping and vertical sides of filling and embankments,

excavating benchings in sloping ground to receive filling and in sides of sloping filling, including disposal,

blinding surfaces of filling with sand, gravel, ash or other fine material,

providing protective filling and removing on completion,

removing from site unsuitable and surplus filling materials,

quality control testing of placed fill layers according to project specifications.

C PAVEMENT LAYERS

1. Related Specification Section:

Section 321123 – Aggregate Base Course
Section 321216 – Asphalt Paving
Section 321116.16 – Aggregate sub-Base Course
Section 321133 – Cement-Treated and Cement Bound Base Course
Section 321313 – Concrete Paving
Section 321373 – Concrete Paving Joint Sealants

2. The works under this item are given as a Lumpsum Item.

3. This item covers all pavement layers over the existing structure, new structure and at grade roads.

4. Work is deemed to include:

Conrete pavement, polyethylene and lean concrete

furnishing of all associated concrete and joint component materials, preparation of bases, concrete mixing, placing, compacting, finishing and curing, as well as all joint sawing, cutting and cleaning operations, drilling and installing dowels and deformed tie bars and other joint accessories,

aggregate base course furnished, crushed and screened, mixed with water, placed, spread, compacted and finished, completed, and accepted,

bituminous wearing course furnished spread, compacted, completed and accepted,

bituminous prime coat and tack coat,

surface preparation, protective measures to avoid staining or damage to appurtenances, blotting of prime coats when required, and cleaning stains and repairing damage caused by equipment, etc.

bituminous layers constructed by order of the Engineer to correct deficiencies in total thickness of bituminous courses or to compensate for major deficiencies in the thickness of any underlying bituminous course,

establishment of the job mix formula, surface preparation, construction of joints, hand painting of contact surfaces, remedial treatment of surface irregularities, cutting of cores and slabs for testing or measurement purposes, reinstatement of core and slab areas of pavement, rolled down longitudinal bituminous edge strips, additional thickness of bituminous course in excess of the specified thickness, and other ancillary items.

D ROAD PAVEMENT MARKING

1. Related Specification Section:

Section 321723 – Road Pavement Marking

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

pavement marking lines, painted pavement markings and special markings,

setting out, surface preparation, application and curing.

furnishing all materials, labour, equipment, tools, supplies and all other items necessary for the proper completion of work.

E ROAD TRAFFIC SIGNS

1. Related Specification Section:

Section 321750 – Road Traffic Signs

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

triangular, circular, octagonal and small rectangular signs,

rectangular and trapezoidal signs over 1 square meter (m2) in surface area,

single post sign supports and foundation,

multiple post sign supports and foundation,

all signs should be furnished, installed and accepted,

excavation, formwork, footings, backfilling and compacting, concrete, reinforcement, disposal of surplus excavated material and earthwork and other ancillary items.

4- ELECTRICAL WORKS

A DISMANTLING, DEMOLISHING AND RELOCATION WORKS OF EXISTING STREET LIGHTING

1. The works under this item are given as a Lumpsum Item.

2. Work is deemed to include the costs of providing all necessary protective measures, upon need, for the existing Electrical works of Jam Sadiq Bridge prior to any Construction Works of the first new bridge to ensure safety operation as lately directed by the Client, dismantling, demolishing, relocation works in coordination with KMC, stacking to designated places and coordination with existing services for the following items:

   existing LV street lighting cables, including cable trenches, cable ducts, joints, connectors, etc.

   existing earthing network, including conductors, rods, pits, trenches, etc.

   existing manholes or handholes, including foundations, covers, frames, etc.

   existing outdoor distribution boards (feeder pillars), including foundations, support structures, etc.

   existing street lighting poles, including foundations, drawpits, luminaires, cabling inside poles, etc.

B NEW STREET LIGHTING

1. Related Specification Section:

   Section 260500 –Basic Electrical Materials and Methods
   Section 260519 – Low Voltage Electrical Power Conductors and Cables
   Section 260526 – Grounding and Bonding for Electrical Systems
   Section 260554 – Underground Ducts and Raceways for Electrical Systems
   Section 262416 – Panel Boards
   Section 265600 – Exterior Lighting

2. The works under this item are given as a Lumpsum Item.

3. This item covers the complete street lighting system for the rehabilitated and new bridges, including basic electrical materials and methods, low voltage electrical power conductors and cables, grounding and bonding, underground ducts and raceways, panel boards and exterior lighting.

4. The basic electrical materials and methods are deemed to include:

supply, installation, testing, commissioning, putting into satisfactory operation and handing over complete systems,

coordination with local electricity authorities for power supply provision, including necessary instrumentation, enclosures and accessories required by them to effect complete kWh-metering installations, if needed. The kilowatt-hour meters shall be approved by the local electricity authority,

short circuit and protection coordination study for the LV network distribution including the setting of all protective relays and circuit breakers,

provision of maintenance and operation manuals and spare parts lists and submitting the required number of copies,

coordination with other trades including minor approved modifications and additions to ensure compatibility,

minor items and accessories required for normal operation and maintenance,

items which do not appear in the list and which are necessary for normal operation of listed,

all costs in connection with the supply, installation and use of materials, labour, accessories and all incidentals necessary for the proper execution and completion of all works in accordance with the specifications,

marking the positions of and cutting or forming holes, mortices, chases and the like in any surface and making good all work disturbed,

assembling and jointing together component parts of composite units and providing any necessary jointing materials,

patterns, moulds, templates and the like,

priming or painting off-site and proprietary finishes or surface treatments applied as part of the manufacturing process,

corrosion protective treatments and coatings to fixings, hangers and supporting materials, sleeves including cover plates,

fire sealants,

brackets and supports,

temporary works and removing and making good after,

extra material, spare parts, tools and instruments as called for in specifications and/or recommended by the manufacturers, except where required to be included separately,

plates, labels and tags for the identification of plant, equipment, cables, switches and the like,

factory witness tests including all expenses where specified,

builder’s works for electrical installations including excavation, equipment foundation, etc

warranties as specified,

softwares and software licenses, where required,

temporarily operating each installation, including attendants, special insurance and providing the power supply,

cutting and pinning ends of supports for equipment, ancillaries, fittings, and the like,

painting on-site including colour coding,

builder's work in connection,

training Employer's personnel in operation and maintenance of systems,

anti-vibration mountings, including anti-vibration material and seismic restraints.

5. The low voltage electrical power conductors and cables are deemed to include:

conduits, fittings, draw wires and the like,

cable sleeves where required and with size and type,

cable connectors and cable joints (where permitted) including joint boxes, sealing boxes, shrouds and the like, materials and heat for making the joints,

allowance in cable length for cables entering fittings and accessories, equipment or control gear,

necessary components and accessories for fixing cables,

cable trenches for directly buried cables, if needed, including excavation, backfilling, disposal of surplus excavated material and earthwork support,

protective tile and/or tapes,

cable markers,

keeping the excavation free from water, however arising, including groundwater.

6. The grounding and bonding are deemed to include:

complete system as specified including trenches excavation, backfilling, reinstatement,

earthing loops conductors, conduits for earthing conductors, lattices, pits, electrodes, connectors, clamps, earthing conductors from earthing loops, earth lattices, exothermic welding to these earthing loops and rebars, earthing conductors from bars to equipment, equipotential earthing of equipment and electrical identification as required by specifications,

bonding and connection between earthing networks, at various levels of rock-cut line, where applicable,

bonding to all metallic equipments as per specification,

calculating / measuring earth fault loop impedance and checking its compliance with specifications.

7. The cable ducts and duct banks are deemed to include:

excavation, if needed, including: backfilling, disposal of surplus excavated material and earthwork support, keeping the excavation free from water, however arising, including groundwater

duct couplers, plugs, bends and other duct accessories,

duct racks/spacers.

8. The manholes, handholes and other underground structures are deemed to include:

excavation including: backfilling, disposal of surplus excavated material and earthwork support, keeping the excavation free from water, however arising, including groundwater,

concrete, reinforcement, formwork and waterproofing,

blockwork, brickwork and rendering,

building in ends of pipes including cutting pipes,

step irons, covers and frames.

9. The panel boards are deemed to include:

concrete bases and support structures,

termination of incoming and outgoing cables to equipment including cable glands, terminations and accessories,

fixing and support structures and materials required for installation of equipment,

all components housed within the distribution board,

spare parts, tools, and instruments,

harmonic analysis, where required.

10. The exterior lighting works are deemed to include:

lighting fixtures / luminaires including lamps / light sources, control gear / drivers, surge protection devices, transformers, ignitors, etc. and all luminaire components,

aiming and adjustment,

lighting column / pole, supporting bracket/arm, template, fixation plate, bolts and nuts, caps, handholes, etc.

column concrete base (foundation) and associated cables draw-pit and other related civil works,

cabling inside column,

all relevant poles accessories and fittings,

cost of any alteration in the column specification or foundation dimensions.

C NEW ITS CIVIL INFRASTRUCTURE

1. Related Specification Section:

Section 260543 – Underground Ducts and Raceways for Electrical Systems

2. The works under this item are given as a Lumpsum Item.

3. This item covers the complete ITS civil infrastructure for the rehabilitated and new bridges.

4. Work is deemed to include:

excavation, including backfilling, disposal of surplus excavated material and earthwork support,

cable ducts and duct banks,

duct couplers, plugs, bends and other duct accessories,

duct racks/spacers,

protective tile and/or tapes.

manholes, handholes and other underground structures,

manhole/handhole concrete, reinforcement, formwork and waterproofing,

manhole/handhole blockwork, brickwork and rendering,

building in ends of pipes including cutting pipes.

keeping the excavation free from water, however arising, including groundwater.

5- UTILITIES

A KARACHI ELECTRIC (K.ELECTRIC)

B SUI SOUTHERN GAS COMPANY (SSGC)

C KARACHI WATER & SEWERAGE BOARD (KWSB)

D PAKISTAN TELECOMMUNICATION CORPORATION LIMITED (PTCL)

E NATIONAL TELECOMMUNICATION CORPORATION (NTC)

F ANY OTHER UTILITY

1. Related Specification Section:

   Section 336200 – Relocation of Utilities

2. The works under this item are given as a Lumpsum Item.

3. Work is deemed to include:

   preparation and submission of proposals/ drawings/ shop drawings,

   coordination with Authorities and securing approvals,

   removal, relocation and/or protection of all existing utilities,

   excavation / back filling,

   dismantling of concrete work,

   sides of excavations. timber shoring, planking, strutting, and providing slope for upholding the sides of excavation,

   dewatering and all safety measures,

   plain / reinforced concrete of any grade and reinforcement, if required including form work etc.

   removal of rubbish material, repairing and restoration,

   testing and commissioning,

   connection with existing line & all fittings, valves, covers etc.

all jointing / wrapping / coating,

disposal of removal/excavated material to the designated places,

disconnection / plugging of existing services / utilities & all necessary approvals / charges / fees etc.

hanging of cables as per the standard procedure of the utility agency and approval of Engineer,

reinstatement of pavement and levels to its original conditions after utility works (diversion of existing utilities and new utilities),

all temporary works, sign boards and other precautionary measures.

PRICING SCHEDULES

SUMMARY
PROCUREMENT OF PACKAGE - 4: NEW JAM SADIQ BRIDGE (YELLOW CORRIDOR SEGMENT 3)

		Amount PKR
1	GENERAL AND PARTICULAR CONDITIONS OF CONTRACT	
2	GENERAL REQUIREMENTS	
3	DESIGN & SPECIAL WORKS	
4	BRIDGE WORKS	
5	ROADWORKS	
6	ELECTRICAL WORKS	
7	UTILITIES	

TOTAL PROCUREMENT OF PACKAGE - 4: NEW JAM SADIQ BRIDGE (YELLOW CORRIDOR SEGMENT 3) To Form of Proposal	PKR	

Item	Description	Unit	Amount PKR
1	**GENERAL AND PARTICULAR CONDITIONS OF CONTRACT**		
	The Contractor shall be deemed, prior to submitting his Tender, to have carefully studied, understood fully and made due allowance in his Tender, for all provisions and requirements, expressed and implied, in the Conditions of Contract.		
	Allow and price for all direct and indirect costs and associated expenses necessarily incurred in complying with and fulfilling the Contractor obligations and responsibilities prescribed in and/or reasonably inferred from the Conditions of Contract in addition to the profit margin, unless otherwise priced and included separately in the "Schedule of Priced Activities".		
A	Performance Security	Item	
B	Programme and Cash Flow	Item	
C	Contractor's superintendence for the Works includng the subcontractors	Item	
D	Safety, Security and Protection of the Environment	Item	
E	Insurance of Works and Contractor's Equipment	Item	
F	Third Party Insurance and Insurance on Employer's property	Item	
G	Insurance Against Accident to Workmen	Item	
H	Professional Indemnity Insurance	Item	
		To Collection	

Item	Description	Unit	Amount PKR
A	Avoidance of Damage to Roads	Item	
B	Opportunities and Facilities for Other Contractors	Item	
C	Costs of Samples and Tests	Item	
D	Defects Liability Period, Completion, Cost of Outstanding Work and Remedying Defects	Item	
	Additional Items Which the Contractor May Consider to be Added		
		To Collection	

COLLECTION

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1	**GENERAL AND PARTICULAR CONDITIONS OF CONTRACT**		
	To Summary	PKR	

Item	Description	Unit	Amount PKR
2	**GENERAL REQUIREMENTS**		
	The Contractor shall be deemed, prior to submitting his Tender, to have carefully studied, understood fully and made due allowance in his Tender, for all provisions and requirements, expressed and implied, in Division 1 - General Requirements		
	Allow and price for all direct and indirect costs and associated expenses necessarily incurred in complying with and fulfilling the Contractor obligations and responsibilities precribed in and/or reasonably inferred from the following Division 1 - General Requirements sections		
A	010000 - General Requirements	Item	
B	011000 - Summary	Item	
C	011200 - Multiple Contract Summary	Item	
D	012500 - Substitution Procedures	Item	
E	013100 - Project Management and Coordination	Item	
F	013200 - Construction Progress Documentation	Item	
G	013233 - Photographic Documentation	Item	
H	013300 - Submittal Procedures	Item	
I	013520 - Health and Safety Requirements	Item	

To Collection

Item	Description	Unit	Amount PKR
A	014000 - Quality Requirements	Item	
B	014200 - References	Item	
C	015000 - Temporary Facilities and Control	Item	
D	015530 - Temporary Traffic Management	Item	
E	016000 - Product Requirements	Item	
F	017300 - Execution	Item	
G	017419 - Construction Waste Management and Disposal	Item	
H	017700 - Closeout Procedures	Item	
I	017823 - Operation and Maintenance Data	Item	
J	017836 - Warranties	Item	
K	017839 - Records (As-Built) Documents	Item	
L	017900 - Demonstration and Training	Item	
		To Collection	

COLLECTION

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Page 2

2 GENERAL REQUIREMENTS

To Summary PKR

Item	Description	Unit	Amount PKR
3	**DESIGN & SPECIAL WORKS**		
A	Design Works	Item	
B	Geotechnical Investigations	Item	
C	Physical Hydraulic Model	Item	
D	River Training Works	Item	
E	Temporary Traffic Management	Item	
3	**DESIGN & SPECIAL WORKS**		
	To Summary	PKR	

Item	Description	Unit	Amount PKR
4	**BRIDGE WORKS**		
4.1	**NEW BRIDGE**		
A	Structural Excavation and Fill	Item	
B	Superstructure (Precast)	Item	
C	Superstructure (Cast-in-situ)	Item	
D	Substructure	Item	
E	Elastomeric Bearings	Item	
F	Expansion Joints	Item	
G	Bridge Drainage System	Item	
		To Collection	

Item	Description	Unit	Amount PKR
4.2	**DEMOLITION OF EXISTING BRIDGE**		
A	Demolition of existing bridge and removal of debris to dumping areas approved by the Authorities.	Item	
4.3	**RECONSTRUCTION OF EXISTING BRIDGE**		
A	Structural Excavation and Fill	Item	
B	Superstructure (Precast)	Item	
C	Superstructure (Cast-in-situ)	Item	
D	Substructure	Item	
E	Elastomeric Bearings	Item	
F	Expansion Joints	Item	
G	Bridge Drainage System	Item	
		To Collection	
	COLLECTION		
	Page 1		
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4	**BRIDGE WORKS**		
	To Summary	PKR	

Item	Description	Unit	Amount PKR
5	**ROADWORKS**		
A	Site Clearance	Item	
B	Earth Moving	Item	
C	Pavement Layers	Item	
D	Road Pavement Marking	Item	
E	Road Traffic Signs	Item	
5	**ROADWORKS** To Summary	PKR	

Item	Description	Unit	Amount PKR
6	**ELECTRICAL WORKS**		
A	Dismantling, Demolishing and Relocation Works of Existing Street Lighting in coordination with KMC	Item	
B	New Street Lighting System	Item	
C	New ITS Civil Infrastructure	Item	

6	**ELECTRICAL WORKS** To Summary	PKR	

Item	Description	Unit	Amount PKR
7	**UTILITIES**		
A	Karachi Electric (K.Electric)	Item	
B	Sui Southern Gas Company (SSGC)	Item	
C	Pakistan Telecommunication Corporation Limited (PTCL)	Item	
D	National Telecommunication Corporation (NTC)	Item	
E	Karachi Water & Sewerage Board (KW&SB)	Item	
F	Any other Utility	Item	
7	**UTILITIES** To Summary	PKR	